

BENCHMARKS

VOLUME 8 NUMBER 2

NORTH TEXAS STATE UNIVERSITY

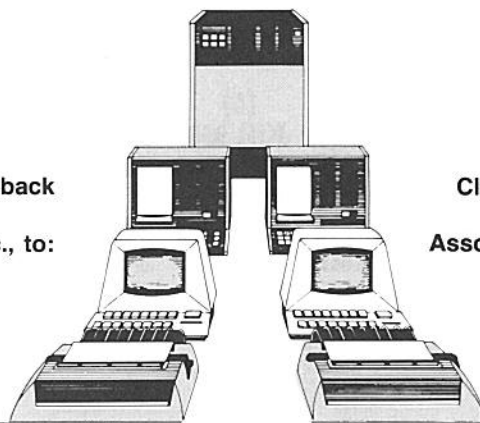
MARCH 1987

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BENCHMARKS Reader/User feedback is encouraged.

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**NEW POLICIES,
PROCEDURES,
AND OTHER
IMPORTANT
STUFF**

Third Artificial Intelligence Symposium to Be Shown

Texas Instruments, Inc. is sponsoring the third Artificial Intelligence Symposium on Wednesday, April 8, from 8:30 a.m. until 2:30 p.m. The subject for this symposium is "An AI Productivity Roundtable," with Edward Feigenbaum of Stanford, George Heilmeier of TI, Apple's Alan Kay, Douglas Lenat from MOC, Roger Schank of Yale, Herbert Schorr of IBM, and Harry of Tennant of TI. Following this symposium, a specially prepared 90-minute summary of Symposiums I and II will be shown.

NTSU will broadcast the symposium on Channel 8, and the Media Library will be taping it for future viewing. Televisions for use in classrooms will be available on a limited basis from the Media Library, and the following rooms will set up for public viewing:

Wooten: 122	GAB: 104	Terrell: 120	Mathews: 128	BA: 162	Union: Lyceum
222	105	121			410*
323	201				
	203				
	204				
	206				
	314				
	318				

*College of Business Faculty and Students have seating preference here.

The College of Business is hosting the symposium in the University Union Room 410 for people from that department, however people from other departments are welcome to attend, should extra space be available. Copies of the Symposium Notebook will distributed which contain space for taking notes, additional information on the expert participants, and an AI glossary and bibliography. John Clark, of the BCIS faculty, anticipates having extra Notebooks and would happy to let you have one. You can contact him at 565-3110. You can order the Symposium Proceedings/Notebook, available 8-10 weeks *after* April 8, 1987, by calling 1-800-527-3500 and charging it to Visa or MasterCard. The price of the Proceedings is \$29.95 (plus tax).

New Separator Page on All Printouts

By Philip C. Baczewski, MUSIC/SP Timeshare Coordinator (AC12@NTSMUSIC)

A new separator page (header/trailer page) format has been in effect for all printouts routed to the local or remote line printers since the beginning of March. The new format provides more information than the old and additionally, 'rotated' output printed on the HP laser printer now has all the information needed (fields 1-10) to file the printout accurately.

The new separator page format has 16 fields on a 133-column line (the old format had 10 fields), and the line is printed at least 6 times at the top of each printout. The following is a example of the fields with a brief explanation of each:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
* START	STUDENT	USERNAME	JOBNAME	JOB 9999	SYS	ACAD	LASER
* START	STUDENT	USERNAME	JOBNAME	JOB 9999	SYS	ACAD	LASER
* START	STUDENT	USERNAME	JOBNAME	JOB 9999	SYS	ACAD	LASER
* START	STUDENT	USERNAME	JOBNAME	JOB 9999	SYS	ACAD	LASER
* START	STUDENT	USERNAME	JOBNAME	JOB 9999	SYS	ACAD	LASER
* START	STUDENT	USERNAME	JOBNAME	JOB 9999	SYS	ACAD	LASER

1. Separator page type - START, END, or CONT
2. Type field - STUDENT, FACULTY, SECURE, etc.
3. Name field - programmer name from the MVS job card or DIST / USERID from CMS or VAX jobs routed through RSCS
4. Jobname - Jobname from MVS job card or DIST from CMS or VAX
5. Job number - assigned by JES2 - VAX or CMS output will have their spoolid in this field unless it is a duplication of a JES2 job number, in which case JES2 will assign the next available job number
6. SYS - (system)
7. System name - ACAD or ADMN (ACAD for MUSIC, VAX, and CMS users)
8. Printer Name - name of the printer on which the output was printed

(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
A	1	001	001	LOCAL	11.32.09 AM	04 MAR 87	START *
A	1	001	001	LOCAL	11.32.09 AM	04 MAR 87	START *
A	1	001	001	LOCAL	11.32.09 AM	04 MAR 87	START *
A	1	001	001	LOCAL	11.32.09 AM	04 MAR 87	START *
A	1	001	001	LOCAL	11.32.09 AM	04 MAR 87	START *
A	1	001	001	LOCAL	11.32.09 AM	04 MAR 87	START *

9. Sysout Class - (usually A)
10. Output group number - (Job Output Element name - usually 1)
11. JOE ID 1 - Job Output Element 1 (usually 1)
12. JOE ID 2 - Job Output Element 2 (usually 1)
13. Route - LOCAL, or R0001 (remote 1), R0003 (remote 3), etc.
14. Print time - start time on START page - end time on END page
15. Print date
16. Separator page type - START, END, or CONT

Enforcement of Disk Dataset Naming Convention Tightened

The naming convention for OS disk datasets on the ACADemic NAS/8083 CPU is: **USER.myid.filename** where:

USER.	- must appear
myid	- is your user ID-Code, and must appear
.	- must appear
filename	- is one or more fields (each of which may not exceed 8 characters) separated by periods.

In the past, if you did not comply with the naming convention outlined above, your dataset(s) were deleted from the disk(s) without warning. This was enforced somewhat haphazardly, however, since human intervention was required to identify and delete an illegally named dataset. Beginning around the end of May, steps will be taken to automate this task.

The "steps" involve a new procedure that monitors the high-level qualifier of a dataset name. For faculty and students, the high-level qualifiers are **USER.**, as indicated above, for non-VSAM datasets, and **USRV.** for VSAM datasets.

Once the new procedure is in effect, datasets without a proper high-level qualifier cannot be created or accessed. If a job attempts to create or access a dataset that does not have a proper high-level qualifier, the job will fail with a JCL error, and the following message will appear in the system messages:

IEF720I jobname ddname - USER NOT AUTHORIZED TO DEFINE THIS DATA SET

If you currently have datasets that do not conform to the above mentioned conventions, or jobs that create datasets that do not conform, please delete or rename those datasets or fix the jobs before May of this

```
//myidname JOB (myid,:05,1),'yourname',PASSWORD=yourmvspassword
// EXEC IEHPROGM
RENAME DSNAME=old.data.set.name,VOL=SYSDA=volumename,
        NEWNAME=USER.myid.newname
```

(col. 72)

By Ill Sun Yoon, Graphics Lab Employee (AC26@NTSUVAXA)

To route the graphic image file from the VAX to the LCP01 you must:

- For example, if you already created an image file called `sample.dat`, you could issue the command:
print/device=tta1 sample.dat This would cause the `sample.dat` file to be routed to the LCP01 system in the Graphics Lab, where you would pick up the output.

Robert G. Brookshire and David J. Molta presented a paper entitled *Microcomputer Networks for Research and Teaching* at the annual meeting of the Southwest Political Science Association Meeting, March 18-21, Dallas, Texas. Dr. Brookshire has also had a chapter published in the book *Political Elites in Anglo-American Democracies*, edited by Harold Clarke and Moshe Czudnowski (DeKalb, IL: Northern Illinois University Press, 1987). The chapter, co-authored with Dean F. Duncan, III of Emory University, is entitled "Survival in the U.S. Congress."

WE NEED 3270 Compatible Terminals. If you have some you are not using and would like to relocate them, please call Nell at extension 3231.

Whoops!

The last issue of *Benchmarks* erroneously stated that GMAIL is **not** available at NTSU. Actually, it is alive and well and living on the VAXcluster. For more information type **GMAIL** while logged-on to the VAX. At the GMAIL) prompt type: **HELP**.

M I C R O C O M P U T E R S

PC-SIG Library Available

By Scott Barber, Academic Computing Staff (AC10@NTSMUSIC)

If you have been wanting to acquire public domain MS-DOS software but haven't wanted to send off for it, or to spend the long distance money, or to bother your hacker friend any more than you already do, we have another solution for you.

Last October, the Computing Center received the entire, that's right, the ENTIRE library of public domain software from the PC-SIG library on a CD-ROM disk. It includes the contents of 605 diskettes, plus the text of the Bible, plus some search files. This is all contained on ONE compact disk, and there are 43 megabytes left!

Anyway, you are welcome to this wealth of freely-available software by dropping off FORMATTED diskettes in ISB 119. Please request software BY DISKETTE NUMBER, and be prepared to leave diskettes with the receptionists in case they are busy. Please be understanding about the number of diskettes you request and the amount of time before they are ready!

Now that you know the stuff is there, how do you find out which diskettes to ask for? There are a couple of ways to find the diskette numbers you want. One is to purchase The PC-SIG Library book (available in the University Store), and join up to receive the supplemental updates. These publications list and describe the software quite comprehensively. The other way is to bring one formatted diskette to the front office of the Computing Center. They can give you an index file for the diskette library with one-line descriptions and a listing program with which to search it.

We encourage you to try this software, use it for your benefit, enjoyment, and productivity and support the authors in the spirit in which they are providing it for us.

Discounted WordPerfect Corporation Software Available to Students

Chambers International Corporation has announced a "student software program," which makes WordPerfect Corporation Software available to full-time students at a reduced price. To qualify for the reduced pricing, a student must furnish a photo-copy of his/her current student identification card and a photo-copy of either his/her social security card, drivers license, or some other well known form of identification that displays a social security number, along with his/her order form. Order forms are available in the reception area of the Computing Center (ISB 119).

Announcing the North Texas RBBS

By Scott Barber, Academic Computing Staff (AC10@NTSMUSIC)

A new computer bulletin board system, the North Texas RBBS, has recently gone on-line to serve PC users in the Denton area. Although not officially sponsored by NTSU, the North Texas RBBS is intended primarily to serve as a conferencing and software exchange vehicle for the NTSU community. The system operator (SYSOP), Dave Molta, plans to make the BBS available as many hours as possible. Since it is a new board, early evening hours are often devoted to system maintenance, but the board is generally available during day-time hours, evenings after 10:00 and weekends. The board supports 1200 and 2400 bps modems and can be accessed by dialing 383-1953.

This board uses RBBS-PC software, a widely used BBS package. The remainder of this article addresses how to get into this and other RBBS-based bulletin boards. For more information on accessing BBS services, see *Benchmarks*, September/October, 1986).

After configuring your communications software for 8 data bits, 1 stop bit, and no parity, dial the number listed above. After getting a connection, you will be prompted for your name, the city you are calling from, and the type of PC you are using. You will also be asked for a password to use for future access. You will then be asked if you would like to skip the bulletins. As a new user, you must read the first three bulletins

which contain general system rules and instructions for registration (you may also want to look at the other bulletins and perhaps capture the RBBS tutorial to your PC). To register, you should leave a comment for the SYSOP from the main menu. Security levels are generally upgraded within 24 hours. Until this time, you will be restricted from accessing the message area, the conferences, and the files area.

When you call back the second time, you will have access to all of the board's features. From the main menu, you can explore the general message area and leave private messages for specific users or general messages for everyone. You can enter one of the board's conferences by entering **J)oin** from the main menu. This will display a list of available conferences. Type **J)oin** again and you will be asked for the conference name. After you enter the name, you will be taken to the conference's main menu, which looks just like the RBBS main menu except the conference name is listed on the next-to-last line. Accessing the conference message area is identical to accessing the general message area. To quit a conference, type **J)oin** from the conference main menu and **M)ain** to get back to the RBBS main menu.

Once you are back to the main menu, you may want to examine the list of programs available for downloading. Requesting **F)iles** from the main menu will take you to the files menu. To get a list of the directories available, request **L)ist**. To see the programs available in a specific directory, type **L;X** where X is the number of the directory you wish to examine. These directories contain brief descriptions of the programs available for downloading.

To download a program, type **D;filename** from the file menu. You will be asked for a file-transfer protocol (if you don't know what this means, go back to the file menu and look at the file transfer tutorial). Prepare your software to receive and the file will be transmitted to your PC. Note that most files on the BBS have been compressed using the ARC utility to save space. If you don't have a copy of ARC, you can download the file **ARC???.EXE** from the utility directory.

Once you have completed your file transfers (please feel free to upload any public domain or shareware software that may be of interest to others), you may want to look at the **U)tilities** menu, accessible by typing **U** from the main menu. This menu allows you to accomplish such tasks as changing your password, examining a list of users, setting a default file-transfer protocol, and invoking graphics options. For a brief explanation of the commands available on any menu, request **H)elp**.

Although not currently implemented, RBBS-PC supports a feature called "Doors" which allows for the execution of programs on the host PC whose screen display is redirected to you through the communications port. This will allow users to access text-based applications while on-line. For example, you can execute **EDLIN** on the BBS's PC from your own PC. Look for this feature to be implemented in the future.

Please note that while Dave Molta is an employee of the NTSU Computing Center, the North Texas RBBS has no official relationship with the University. It is open to all who choose to register, provided they abide by the rules that have been established. However, if you are a member of the University community and need some help getting connected on the bulletin board, you may call the Help Desk at 565-4050 for assistance.

V A X E N

How to Submit Your JCL Programs Directly to MVS From the VAXen

By Billy Barron, VAX Operator (BILLY@NTSUVAXB)

The first thing you need to do is to edit your JCL file with one of the VAX editors. Make sure that you include the following two lines if you want your results to return to the VAX:

```
/*ROUTE PRINT NTSUVAXB.(userid)
/*ROUTE PUNCH NTSUVAXB.(userid)
```

For example: (for the userid AC02)

```
/*ROUTE PRINT NTSUVAXB.AC02
/*ROUTE PUNCH NTSUVAXB.AC02
```

Then you need to type the following line from the command prompt (\$).

```
$SEND/FILE filename JOB@ACADMVS
```

For example: (for the file PROGRAM.JCL)

```
$send/file program.jcl job@acadmvs
```

Some messages should appear during the next minute or so. They will be very similar to the ones below.

(NTSUVAXA) - Sent file 8604 on link NTSUVAXB to ACADMVS JOB

(NTSUVAXB) - Sent file 8604 on link NTSUVM1 to ACADMVS JOB

(NTSUVM1) - DMTNCM147I SENT FILE 3548 (8604) ON LINK ACADMVS TO ACADMVS JOB

Now you can go off and do whatever you want on the VAX. When MVS is through executing your program, you will get a message something like the one below.

Received network file PROGRAM.RESULTS from JOB@ACADMVS

Now you need to type:

```
$ RECEIVE
```

Then a screen like this will appear:

Files received for AC02

Source file	Class	Node	User	Date	Time	Records
PROGRAM.RESULTS;1	PUN A	ACADMVS	AC02	3-Mar-1987	16:21	48

Your prompt will now be **RECEIVE**).

Type the following : **RECEIVE *** at the **RECEIVE**) prompt.

Then it will say:

Copied punch file

from: PROGRAM.RESULTS;1

to: DRA0:[AC02]PROGRAM.RESULTS;1

Hit **(CTRL)(Z)** to exit the receive program. Now your file will be in your directory. You now may **TYPE** or **EDIT** the file if you so desire.

NOTE: You must have an OS-BATCH userid and password. If you don't have one, you can apply for one at the Computing Center, ISB 119.

The New PRMENU

By Billy Barron, VAX Operator (BILLY@NTSUVAXB)

The PRMENU now uses JNET instead of HASP+. There are several reasons for this change. First, the use of HASP required an OS-BATCH account. Secondly, HASP translated some characters incorrectly (for example, Brackets). Finally, the elimination of HASP (when it is finally gone) will save several hundreds of dollars a year in maintenance costs.

There are other changes in the menu. No longer is an OS-BATCH account and password needed to send files from the VAX to the LASER, REMOTE3, and REMOTE1 printers. The default laser print train is now TNS1 due to the request of users. The old print train was TN01, if you still wish to use it. Unfortunately, the TN01 print train loses one line at the bottom of each page. There are two ways to solve this problem. The first is to include form feeds **((CTRL)(L))** in your file so that the laser printer never reached the bottom of the page. The second way is to choose the Waterloo Script option at the menu.

The Waterloo/SCRIPT option will send your file to MVS and there Waterloo/SCRIPT will process it. Waterloo/SCRIPT will automatically give you margins and page numbers. You may include Waterloo/SCRIPT

commands in your file. If you need documentation on Waterloo/SCRIPT, log into MUSIC and type **WATERLOO** from the *GO* prompt. The PRTMENU program will automatically translate form feeds ((CTRL)(L)) that are in column one into the equivalent Waterloo/SCRIPT commands.

NOTE: To use the Waterloo/Script option, you must have an OS-BATCH account.

New UNREAD Command

By James Shoffit, VAX Operator (JAMES@NTSUVAXA)

The new command, **UNREAD**, will tell you about mail you've sent to a specified user or users. For example,

```
$ unread ac02, rn40
```

will list, by date, time and subject, all the messages you've sent to AC02 and RN40 that they haven't read. Bear in mind that, although it involves the MAIL system, you can't actually issue this command from within MAIL; you must first exit to DCL. *NOTE: This will work only on MAIL sent to users on the VAXcluster.*

O P E R A T I O N S

Disk Backup Schedules

Backup Schedule for OS/MVS

OS/MVS disk packs (academic and administrative) are backed up daily, Tuesday through Saturday, from 4-6:30 a.m., and Sunday from Midnight to 3 a.m. A backup of all the operating systems on the NAS CPU and their contents is done once every two weeks at some low activity period over a weekend.

MUSIC/SP Backup Hours

A message will be sent to all users signed on to MUSIC/SP approximately 10 minutes before backups are begun. It will be in the form **** MUSIC SHUT DOWN AT xxxx AM - SCHEDULED BACKUP ****. To find out the backup hours while signed on to MUSIC/SP, enter **HELP HOURS**. The following backup schedule is currently in effect:

Tuesday	3 a.m. (for about 3 hours)	Weekly backup
Wednesday - Saturday	4 a.m. (for about 2 hours)	Daily backup
Saturday	Midnight (for about 2 hours)	Daily backup

PHOENIX Backup Schedule

PHOENIX is backed up weekly on Sunday night. The backup begins at midnight and lasts for approximately 30 minutes.

VAX Backup Schedule

Incremental backups of both VAX systems are performed Monday through Thursday at 4 p.m. Users do not have to log-off, but any files that are open at the time of the backup will NOT be backed up.

Full backups of both systems are done every Friday beginning at 8 a.m. These generally will take all day to complete. Again, users do not have to log-off, but any files that are open will not be backed up.

A "Stand Alone" backup of the system disk is done the third Tuesday of every month, in the afternoon, just before preventive maintenance. This procedure makes a copy of the system disk that can be used to restore its contents if the disk is completely destroyed. The system will be shut down; watch the system log-on message for specific times and dates.

NOTE: No backups are taken on the weekends. Requests for restoration of files should be made via MAIL to the username OPERATOR. Your file can only be restored if it existed before the last backup was done.

BENCHMARKS

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NAS/8083 Dual Processor Performance Statistics for February

CPU	SYSTEM	Scheduled Operating Hours	Planned Maint. Hours	Planned Production Hours	Unplanned Maint. Hours	Production Hours Achieved	System Uptime
ACAD	VM/SP3	672	0.00	672.00	0.25	671.75	99.9%
ACAD	MUSIC/SP	672	34.42	637.58	0.75	636.83	99.9%
ACAD	MVS/JES2	672	0.00	672.00	1.18	670.82	99.8%
ACAD	COMPLETA	672	0.00	672.00	1.73	670.27	99.7%
ADMN	MVS/JES2	672	0.00	672.00	0.43	671.57	99.9%
ADMN	COMPLETA	286	0.00	246.00	1.31	244.69	99.5%
ADMN	ADABASA	672	19.48	652.52	0.60	651.92	99.9%

System Uptime=(Production Hrs. Achieved)/(Planned Production Hrs.)

Production Hrs. Achieved = (Planned Production)-(Unplanned Maint.)

Scheduled Operating Hrs. = (Planned Maint.) + (Planned Production)

MUSIC/SP Planned Maintenance Hours include 22.74 hours for system backup and 11.68 hours for VM/SP3 system backup.

ADABASA'S Planned Maintenance Hours include 19.48 Hrs. for system backup.

The ACAD CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime. The ADMN CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the following key causes:

ACAD CPU:

Miscellaneous

- | | |
|---|------------|
| 1. MVS/JES2 System Tuning/Improvements. | 0.60 HOURS |
| 2. VM/SP3 System Tuning/Improvements. | 3.50 |
| 3. Operator IPL Training. | 0.75 |

TOTAL	1.78 HOURS
GRAND TOTAL FOR ACAD	1.78 HOURS

ADMN CPU:

Miscellaneous

- | | |
|---|------|
| 1. MVS/JES2 System Tuning/Improvements. | 0.60 |
| 2. COMPLETA System Failure. | 0.15 |
| 3. COMPLETA System down to process single jobs. | 1.16 |

TOTAL	1.91 HOURS
GRAND TOTAL	1.91 HOURS

TECHNICAL SUPPORT

ACADemic (NAS) Program Hit Parade *

The following programs were used the most frequently on the NAS CPU during the month of February.

FEBRUARY TOP TEN PROGRAMS IN TERMS OF FREQUENCY OF RUNS

Program	Description	Number of Runs	Percent of Total
1. IEWL	Linkage Editor	11854	17.3
2. PGM=*.DD	Compiled Program	11784	17.2
3. OTHER	Programs not Categorized	8787	12.9
4. IKFCBL00	VS COBOL Compiler	8428	12.3
5. IEBGENER	IBM Utility	5918	8.7
6. SCRIPT	Waterloo/SCRIPT	5858	8.6
7. SASLPA	SAS	4214	6.2
8. PTPCH	Dataset Lister	3312	4.8
9. IEBISAM	IBM ISAM Utility	1577	2.3
10. VAXPRINT	VAX/OS Print Utility	1527	2.2

FEBRUARY TOP TEN PROGRAMS IN TERMS OF CPU SECONDS USED

Program	Description	CPU Seconds	Percent of Total
1. OTHER	Programs not Categorized	40082	27.0
2. PGM=*.DD	Compiled Program	37796	25.5
3. SASLPA	SAS	31269	21.1
4. SCRIPT	Waterloo/SCRIPT	12800	8.6
5. IKFCBL00	VS COBOL Compiler	10007	6.7
6. PTPCH	Dataset Lister	5589	3.8
7. IEWL	Linkage Editor	2840	1.9
8. DAG01	User Program	2377	1.6
9. IEBGENER	IBM Utility	1112	0.7
10. IGIFORT	FORTRAN G1	987	0.7

* ACAD is the official designation of the part of the NAS/8083 CPU that is dedicated to faculty and student use. The portion of the computer reserved for University administrative purposes is termed ADMN.

INFORMATION SYSTEMS

Information Systems News

By Douglas Heruska, Documentation Specialist (AI55@NTSMUSIC)

News from the Information Systems group has not been in *Benchmarks* for several issues. During this time the following changes in staffing have occurred:

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1. Chris Zeigler resigned as Documentation Specialist in August, 1986 to accompany her husband to Bloomsburg University in Pennsylvania, where he accepted a position on the Biology faculty. I was hired by NTSU in January of this year to fill Chris' vacant position. I have retained most of Chris' responsibilities, including User-ID problems and maintenance, *Benchmarks* articles, Standards, and Documentation.
2. Bobby Collier left his position as programmer on the Fiscal Team in August of 1986 to accept a position with M.D. Anderson Cancer Research Hospital in Houston. Elson Dee, formerly of Moore Business Forms here in Denton, was hired to replace Bobby in February, 1987.
3. Scott Norton, a graduate of NTSU, was hired in January, 1987 as a programmer for the Student Records Data Systems Team.
4. Paul Richardson replaced Dee Ann Williams who worked on TCOM Fiscal Systems. He will be located at both TCOM and NTSU.
5. Gary Verwers, programmer, and Tim Moore, Data Control Assistant, have joined the Fiscal Team to fill the positions vacated by Janet Harmon and Robin Braden, respectively.
6. Dan Strange left in February, 1987, to become a Missionary. This created a vacant analyst position on the TCOM Fiscal Systems team which remains unfilled.
7. Randy Franek assumed the newly created position as Assistant Data Base Administrator on the Data Base/Central Programming Support Team this past January.
8. Payroll Personnel's Bill Shumate was promoted to Analyst of Advancement Systems in January, 1987, filling the vacancy created in March of 1986 when Sue August transferred to the Office of Vice-President for Academic Affairs and Provost. Bill Shumate's programming spot is now occupied by Tobie Curry, who started in February 1987.

Get a "Subscription" to Benchmarks

Benchmarks is a vital link between the NTSU Computing Center and the users of our facilities. It is important for all users of the computing facilities to maintain a file of these newsletters because they contain materials which will periodically update existing documents as well as information and suggestions on uses of OS/MVS, MUSIC/SP, the VAXcluster, Microcomputers, and other resources available to NTSU students and faculty. To facilitate the dispersal of *Benchmarks*, *** **FREE** *** subscriptions are available. To receive yours, send the following information to us either by "snail mail" (the post office or campus mail) or electronically, to the User-ID AS04 on MUSIC, VMS, or CMS.

Name _____

Mailing Address _____

PLEASE GIVE A CAMPUS ADDRESS (NOT BOX) IF POSSIBLE! - It's Cheaper !!

Academic Computing Services
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